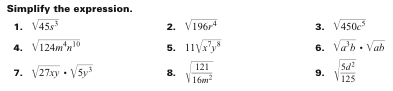
Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

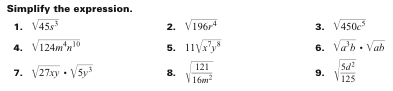
Final Review / Part 2

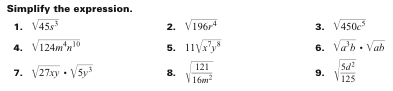
Honors Geometry

Due Date: Wednesday, January 16th

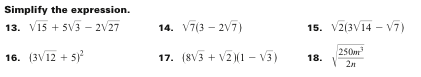
|  |  |  |  |
| --- | --- | --- | --- |
| 1) During a cliff dive competition, a diver begins a dive with his center of gravity 70 feet above the water. The initial vertical velocity of his dive is 8 feet per second.   1. Write an equation that models the height h (in feet) of the divers center of gravity as a function of time (seconds) **h(t) = -16t2 + \_\_\_t + \_\_\_** 2. How long after the diver begins his dive does his center of gravity reach the water? | | 2)An athlete who is 6.5 feet tall throws a shot put with an initial vertical velocity of 40 feet per second. The height of the shot put can be modeled by the function **h(t) = -16t2 + 40t + 6.5.** How long will it take for the shot put to hit the ground? | |
| 3) Simplify: | 4) Simplify: | | 5) Simplify: |
| 6) Your classmate says that **0.0000000432** represented in scientific notation is **4.32 x 108**. Is your classmate right or wrong? Explain and show work. | | 7) Convert the following into scientific notation:  a. 12,000  b. 0.000563  c. 557,000,000 | |
| 8) Solve the following:  a.    b. | | 9) Solve the following:  a.    b. | |

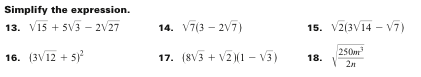












|  |  |
| --- | --- |
| 19. Simplify: | 20. Simplify: |

|  |  |  |
| --- | --- | --- |
| 21. | 22. What is ? | 23. Simplify: |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 24. When z = 4, what is the value of: | 25. What is the simplest form of the radical ? (Assume that x and y are nonnegative) | | | | 26. What is the simplest form of the radical ? | |
| 27. Simplify:  A) 4i  B) 5i  C) 10i  D)  E) | 28. Simplify:  A)  B)  C)  D) 24i | | | | 29. (3i +14) – (7 + 6i) + (2i – 5) | |
| 30. In the standard form, = ?  A) -18 + 15i  B) -18 – 15i  C) -18 – 5i  D) -3i | 31. | | | | 32. | |
| 33. Which real number is equivalent to ?  A.-1  B.  C. 1  D. 9 | 34. | | | | 35. | |
| 36. (9 - 2 | | | 37. -2(5 - 3) + 4(2) | | | |
| 38. The surface area of a rectangular prism is given use the formula where *l* is the length, *w* is the width, and *h* is the height of the prism. Find the surface area of a prism with a length of 5 cm, a width of 6 cm, and a height of 8 cm. | | 39. A Campbell’s soup can has a diameter of 3 inches and a height of 5 inches. Given that the formula for the volume of a cylinder is , how many cubic inches of soup fit in the can? | | | |
| 40. Given that the volume of a cone is , find the volume of the cone below with a height of 22 m and a diameter of 22 m. | | 41. The formula of the volume of a prism is where *l* is the length, *w* is the width and *h* is the height of the brick. What is the height of a box if its volume is 27 m3, its length is 3 m and its width is 3 m? | | | |
| 42. Find the area of the figure below. | | | | 43. A rectangular flower bed is 8 × 10 feet. It is surrounded by a border of uniform width x feet, as shown in the figure below. If the area of the bordering region alone is 40 square feet, what is the value of x?  x    x   1. 1 B) 2 C) 3 D) 10 E) 11 | |
| 44. What is the area of the entire hexagon? All measurements are in feet.  2    5 4 4 5    3 3  3 3  2 | | | | 45. What is the area of the shaded region? Leave your answer in terms of pi.  6 ft  6 ft  8 ft  7 ft    10 ft | |

**Some of the following conjectures are true and some can be proven false using a counterexample. If the statement is true, write the word TRUE in the box. For statements that are false, provide a counterexample.**

|  |  |
| --- | --- |
| **9) Conjecture:** Everything that’s hot is fried chicken. | **10) Conjecture:** English is the only language spoken in the United States. |
| **11) Conjecture:** The square of an odd integer is odd. | **12) Conjecture:** If n is a real number then –n is a negative number. |

|  |  |  |  |
| --- | --- | --- | --- |
| 13) Find the missing side length. Reduce all radicals. | | 14) Find the missing side length. Reduce all radicals. | |
| 15) Find the area of the triangle below. Round to the nearest hundredth. | | 16) A rectangular field shown below is 60 feet wide and 80 feet long. Jaylin and Joyce are at point A. Jaylin walks to point D by walking along the edge of the field through point B. Joyce walks to point D by walking diagonally across the field. About how many meters more does Jaylin walk than Joyce?  **A B**  **C D** | |
| 17) Solve for x.    Classified by sides \_\_\_\_\_\_\_\_\_\_\_\_\_  Classified by angles \_\_\_\_\_\_\_\_\_\_\_\_ | 18) Solve for x.    Classified by sides \_\_\_\_\_\_\_\_\_\_\_\_\_  Classified by angles \_\_\_\_\_\_\_\_\_\_\_\_ | | 19) Solve for x.    Classified by sides \_\_\_\_\_\_\_\_\_\_\_\_\_  Classified by angles \_\_\_\_\_\_\_\_\_\_\_\_ |
| 20) Solve for x. Then find the measure of the indicated angle.    Which theorem is used to solve this problem?   1. Triangle Sum Theorem 2. Exterior Angle Theorem | | 21) Solve for x.    Which theorem is used to solve this problem?   1. Triangle Sum Theorem 2. Exterior Angle Theorem | |

|  |
| --- |
| In the diagram, Δ*EFG* ≅ Δ*OPQ.* Complete the statement.   1. ≅ \_\_\_\_\_   *EF*   1. ∠*P* ≅ \_\_\_\_\_ 2. ∠*G* ≅ \_\_\_\_\_ 3. *m*∠*O* = \_\_\_\_\_ 4. *QO* = \_\_\_\_\_ 5. Δ*GFE* ≅ \_\_\_\_\_ |

|  |  |
| --- | --- |
| 22. Given Δ*HJK* ≅ Δ *TRS*, find the values of *a* and *b*. | 23. Find the value of x and y. |

For #24- 29, determine if the two triangles are congruent. If so, write a congruency statement and identify what postulate is needed to prove congruency.

|  |  |  |
| --- | --- | --- |
| 24) | 25) | 26) |

|  |  |  |
| --- | --- | --- |
| 27) | 28) | 29) |

**Rewrite the conditional statements in if-then form.**

|  |  |
| --- | --- |
| 30) The measure of a straight angle is 180°.  **HYPOTHESIS:   CONCLUSION:**  **IF-THEN FORM:** | 31) Congruent segments are segments that are equal in measure.  **HYPOTHESIS:**  **CONCLUSION:**  **IF-THEN FORM:** |
| 32) Today is Monday if yesterday was Sunday.  **HYPOTHESIS:**  **CONCLUSION:**  **IF-THEN FORM:** | 33) A number is divisible by 4 if it is divisible by 8.  **HYPOTHESIS:**  **CONCLUSION:**  **IF-THEN FORM:** |

**Write the converse, inverse, and contrapositive for each conditional statement that is given. Then decided whether each statement is *true* or *false*.**

**True/False**

|  |  |  |
| --- | --- | --- |
| **34) Conditional Statement** | If the weather is warm, then we will go swimming. |  |
| **Converse** |  |  |
| **Inverse** |  |  |
| **Contrapositive** |  |  |

|  |  |
| --- | --- |
| 1. Find the ratio of a side length in ∆*ABC* to a side length in ∆*DEF*. Then simplify the ratio. | 1. The perimeter and the ratio of the length to the width of a rectangle are given. Find the length and width of the rectangle.   Perimeter: 50 in.  *l*:*w =* 3:2 |
| 1. You purchase a scale model of the Golden Gate Bridge, which is located near San Francisco, California. The model states that the scale is 1 inch: 50 feet. The actual length of the bridge is 8980 feet. What is the length of the model? The model is approximately 15 inches tall. What is the actual height of the bridge? | 4. Given Find *BC*  ,  *ED*  *AE*  *BC*  *AB*   |

Show how the figures are similar.

|  |  |  |
| --- | --- | --- |
| 5.    Explanation: | 6.    Explanation: | 7.    Explanation: |
| 8. | | |

**Proving Congruent Triangles**

|  |  |
| --- | --- |
| 1) Prove the following:  **Given**  **Prove** ∆*DSR* ≅∆*QRS* |  |
| 2) Prove the following:  **Given**  **Prove** ∆*CAS* ≅∆*RTS* |  |
| 3) Prove the following:  **Given**  **Prove** ∆*HLM* ≅∆*KML* |  |
| 4) Prove the following:  **Given**  **Prove** ∆*ABC* ≅∆*XBV* |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5) Complete the proof.  **GIVEN:** ***,*** *D* is the midpoint of AC  **PROVE:** Δ*AB*D ≅ Δ*CBD* | |  |  | | --- | --- | | **Statements** | **Reason** | | **1.** | **1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | **2.** *D* is the midpoint of AC **.** | **2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | 1. **\_\_\_\_\_\_** ≅ **\_\_\_\_\_\_** | **3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | 1. **\_\_\_\_\_\_** ≅ **\_\_\_\_\_\_** | **4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | 1. Δ*ABD* ≅ Δ*CBD* | **5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |
| 6) Write a proof  **GIVEN:**  and  **PROVE:** Δ*ABD* ≅Δ*CDB* |  |
| 7) Prove the following:  **Given:** CF bisects ∠*ACE*    **Prove:** |  |

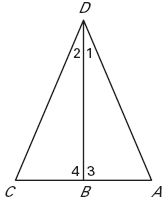
|  |  |
| --- | --- |
| 8) |  |
| 9) |  |
| 10)  Given: In figure  Prove: ST  UQ |  |

|  |  |
| --- | --- |
| 11) Solve each equation. Remember to check for extraneous solutions. | 12) Solve each equation. Remember to check for extraneous solutions. |
| 13) Use conjugates to simplify the expression | 14) Use conjugates to simplify the expression |
| 15) If *m*<0 and *p*>0, which of the following is always true?  A.  B.  C.  D. | 16) Find the values of *x* and *y* in the diagram. |

**17) GIVEN**:  bisects 



**PROVE:** Δ*ADC* is isosceles

****